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SOURCE Meditsinskiy Rabotnik.DEVELOPMENT OF I. P. PAVLOV'S IDEAS[A Digest]

K. M. Bykov

If follows from Pavlov's results that there is an essential unity between the internal and external environments of the organism. The operation and condition of an internal organ is accurately reflected in the brain, just as an external stimulus is. This leads to Pavlov's and Botkin's concept of nervism. Investigation of reflexes (conditional and absolute) originating in the internal environment of the organism enables clinical medicine to recognize more precisely the disturbances of the central nervous, vegetative, and hormonal systems which arise as a result of pathological processes affecting internal organs. Application of Pavlov's theory in this sense has led to the description of special nervous receptors and analyzers which serve as internal sense organs and establish the connection between the hemispheres of the large brain and the total internal environment. We are now justified in asserting that the nervous activity on the highest level arises as a result of the interaction [literally, "intersection"] of factors produced by both environments. In other words, there is no division between the psychic sphere and the somatic sphere.

While many ordinary medical practitioners evince a sincere desire to apply Pavlov's teachings in medical practice, a lack of initiative is exhibited by directors of clinics and heads of university medical schools and research institutes. Only a few medical scientists conduct their work from the viewpoint of Pavlov's theory. Echoes of foreign bourgeois science which fights Botkin's and Pavlov's conceptions are still perceptible in Soviet medicine, although their origin is disguised. The Physiological Institute imeni I. P. Pavlov of the Academy of Medical Sciences USSR, the Institute of Evolutionary Physiology and Pathology of Higher Nervous Activity imeni I. P. Pavlov, the Moscow Institute of Physiology, most laboratories of the Institute of Experimental Medicine of the Academy of Medical Sciences USSR, and most university chairs have not subordinated the direction of their research to continued work on problems formulated by Pavlov. Each of these institutions has a detached laboratory devoted to the study of conditioned reflexes, but they only repeat with more perfect technical means work on digestive and motor reflexes which has already

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been done by Pavlov. Work on biochemical processes, the activity of the peripheral nervous system, and the mechanisms of muscle activity remains outside of the sphere of Pavlov's physiology. Furthermore, some of these laboratories are still under the influence of the foreign, anti-Pavlov concept of the dominance of humoral factors over nervous factors.

It is regrettable that work done under the direction of P. S. Kupalov at the Physiological Department imeni I. P. Pavlov of the Institute of Experimental Medicine of the Academy of Medical Sciences USSR has only begun to deal with most complex form of nervous activity during the past 4 - 5 years. Investigations of this type in the light of Pavlov's theory may add to our knowledge of the mechanism of conscious activity. Furthermore, work results achieved along these lines by the institute in question disprove accusations to the effect that Pavlov's teaching is materialistic. However, Kupalov's assumption of "reflexes without a beginning" contradicts the concept of determinancy of higher nervous activity of the psychic level.

All prerequisites for a continued successful study of the phylogenesis and ontogenesis of conditional reflex activity in humans and animals are given in the huge, excellently equipped research institute at the Pavlovo village (formerly Koltushi), where such investigations were to be executed according to a plan envisaged by Pavlov himself. However, because of the predominant interest of L. A. Orbeli, director of the institute, in the autonomous nervous system, the staff of the institute has concentrated mainly on this field. Although considerable merit must be ascribed to the development of Orbeli's theory of the sympathetic nervous system and the study of problems in the field of the so-called evolutionary physiology, they are only partly and indirectly connected with the aims set by Pavlov and his school and the solution of problems having a bearing on Pavlov's teaching.

It is to be regretted that Orbeli, who was appointed head of all institutions where Pavlov had been active, did not properly steer the staff of the institutions in question toward further development of Pavlov's fundamental ideas, thus continuing the fight with Western European and American theories which have been unceasingly combatted by Pavlov. Orbeli neglects the problem of the connection of the cerebral cortex with internal organs and assumes that the sympathetic nervous system and the cerebellum are the primary regulators. He ascribes a trophic function to the sympathetic nervous system only, which is wrong both from the factual standpoint and that of the evolution of the vegetative nervous system from the same source as the somatic nervous system.

While Orbeli investigated physiological aspects of the trophic function. A. D. Speranskiy concentrated on pathological physiology. By establishing the leading role of the nervous system in the pathogenesis of many diseases, Speranskiy has done a great service to science and medicine. He has attempted to develop a general theory of pathology on this basis, but the attempt did not quite succeed, owing to Speranskiy's tendency to regard physiology as something extraneous, an attitude which resulted in a lack of adequate physiological analysis. The trouble with pathologists is that they like to refer to S. P. Botkin's concept of nervism and its significance in pathological processes, while at the same time they do not accept this idea and only adapt new facts to old theories. The Speranskiy school talks in passing about the brilliant work done by Vvedenskiy and his school on the subject of dystrophy, although this problem is of cardinal importance for the concept of nervism and should not be dealt with just in passing. Speranskiy neglects entirely the problem of introception, which is being investigated extensively by USSR physiologists. One cannot base one's theoretical constructions entirely on parabiosis and the concept of a network of nerves without carrying out one's own analysis. Under the circumstances, the problem of humoral factors is far from being clear to Speranskiy.

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[In discussing physiology, trophism, and pathology, Bykov also criticizes P. K. Anokhin, I. S. Beritov, and Shtern, and praises E. A. Asrat'yan, I. N. Zhuravlev, N. A. Rozanskiy, I. S. Tsitovich, D. A. Biryukov, N. I. Krasnogorskiy, A. G. Ivanov-Smolenskiy, I. P. Razenkov, and Yu. V. Fol'bort.]

As far as clinical medicine is concerned, Pavlov's physiology has exerted an influence on all fields of therapy and also surgery and psychoneurology. The new school of medicine must not be confused with the so-called psychosomatic medicine which developed in Western Europe and the US during the past few decades. The philosophical basis of psychosomatic medicine is oppression of a class by a class, and its purpose is protection of the doomed ruling class against the people. The psychosomatic school postulates that low instincts are suppressed under conditions of "civilized" living and that in consequence neuroses producing disease finally arise. Thus, a representative of reactionary science points out that American Negroes suffer from hypertension, while this condition does not occur among African negroes. He does not mention that the American Negro is discriminated against ~~the~~ exploited.

There is a revival of Freudianism abroad, but the opinion that the modern tendency in USSR medicine is just a kind of reflexological Freudianism must be emphatically rejected. After getting rid of localistic tendencies, we have approached an understanding of the organism as a whole. The dualism inherent in American psychosomatic medicine is entirely foreign to the school which postulates a corticovisceral pathology and assumes a dependence of diseases of internal organs on the central nervous system (consequently, a necessity of applying a therapy which acts through the central nervous system).

[Academician K. M. Bykov's report was presented at the 28 June 1950 session of a combined meeting of the Academy of Sciences USSR and the Academy of Medical Sciences USSR devoted to problems connected with I. P. Pavlov's physiological theory and held at the Moscow House of Scientists. The report was printed verbatim in the 29 June 1950 issue of Meditinskiy Rabotnik, occupying 3½ pages in a special 6-page issue of that newspaper, which usually consists of 4 pages.]

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